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**Amendments to the Claims:**

1. (Cancelled)

2. (Currently Amended) ~~[[A]]~~ The detector as claimed in claim ~~[[1]]~~6, wherein the substrate comprises amplifiers for amplifying the input signals of the integrated module.

3. (Currently Amended) ~~[[A]]~~ The detector as claimed in claim ~~[[1]]~~6, wherein the substrate comprises at least one of one or more multiplexers connected upstream of the integrated module and one or more multiplexers connected downstream of the integrated module.

4. (Currently Amended) ~~[[A]]~~ The detector as claimed in claim ~~[[1]]~~6, wherein the integrated module comprises at least one of one or more amplifiers for amplifying the input signals and one or more multiplexers.

5. (Currently Amended) ~~[[A]]~~ The detector as claimed in claim ~~[[1]]~~6, wherein the integrated module is manufactured from crystalline silicon.

6. (Currently Amended) A detector ~~as claimed in claim 1, wherein the~~  
for an imaging device, comprising

a) a substrate;

5 b) an array of sensor elements, which is formed on one side of the  
substrate and extends along the one side of the substrate to three edges of the substrate;

10 c) at least one integrated electronic module for processing sensor  
signals, the module being mounted at one edge of the substrate and being connected at  
its input side to the sensor elements, and the module comprising at least one analog-  
digital converter for conversion of analog input signals into digital output signals,  
wherein the module is mounted on the same side of the substrate as the array of sensor  
elements.

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7. (Currently Amended) ~~[[A]]~~ The detector as claimed in claim ~~[[1]]~~6, wherein the integrated module is connected to the substrate by at least one of flip-chip contacting, wire-bonding and mounting of packaged ICs on a wafer.

8. (Currently Amended) ~~[[A]]~~ The detector as claimed in claim ~~[[1]]~~6, wherein the substrate comprises electronics of crystalline or amorphous silicon.

9. (Currently Amended) ~~[[A]]~~ The detector as claimed in claim ~~[[1]]~~6, wherein the sensor elements are sensitive to X-radiation and/or visible light.

10. (Currently Amended) An imaging device comprising: a detector having a substrate, an array of sensor elements, and at least one integrated electronic module for processing sensor signals, wherein the array of sensor elements is formed on only one side of the substrate and extends to all but one edge of the substrate,  
5 wherein the module is mounted at the one edge of the substrate and is connected at an input side of the module to the sensor elements~~[[,]]-wherein the module has at least one analog-digital converter for conversion of analog input signals into digital output signals, and wherein the module is mounted on the same side of the substrate as the array of sensor elements.~~

11. (Previously Presented) The imaging device of claim 10, wherein the detector has a plurality of amplifiers, wherein the array of sensor elements is positioned in columns, wherein each of the columns has a readout lead, and wherein each readout lead is connected to one amplifier of the plurality of amplifiers.

12. (Previously Presented) The imaging device of claim 10, wherein the detector has a plurality of flexible connections downstream of the modules for connecting the modules to remote electronics.

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13. (Previously Presented) The imaging device of claim 10, wherein the detector has one or more analog multiplexers connected upstream of the integrated module and one or more digital multiplexers connected downstream of the integrated module.

14. (Currently Amended) The detector of claim [[1]]6, further comprising a plurality of amplifiers, wherein the array of sensor elements is positioned in columns, wherein each of the columns has a readout lead, and wherein each readout lead is connected to one amplifier of the plurality of amplifiers.

15. (Currently Amended) ~~The A~~ detector of ~~claim 14~~, further comprising for an imaging device, comprising:

a) a substrate;

b) an array of sensor elements positioned in columns, each column  
5 having a read out lead, which array is formed on one face of the substrate;

c) at least one integrated electronic module for processing sensor  
signals, the module being mounted at one edge of the substrate, the module including:

one or more analog multiplexers connected to the  
readout leads, at least one analog-to-digital converter connected with  
10 the analog multiplexers for conversion of analogous input signals on  
the readout leads into digital output signals,

at least one amplifier connected with one of the readout  
leads and the analog-to-digital converter, upstream of the integrated  
module and

15 one or more digital multiplexers connected downstream  
of the at least one amplifier and the analog-to-digital converter,  
integrated module

wherein the module is mounted on the same face of the substrate as the  
array of sensor elements.

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16. (Currently Amended) The detector of claim [[1]]6, further comprising a plurality of flexible connections downstream of the modules for connecting the modules to remote electronics.

17. (Currently Amended) A method of forming a detector for an imaging device, the method comprising:

providing a substrate;

5 positioning an array of sensor elements along a first side of the substrate, wherein the array extends to all but one of the edges of the substrate;

providing one or more integrated electronic modules having analog-digital converter for conversion of analog input signals into digital output signals;

positioning one or more integrated electronic modules for processing sensor signals on the one edge of the substrate along the first side of the substrate; and

10 connecting an input of each of the modules to one or more of the sensor elements.

18. (Previously Presented) The method of claim 17, further comprising:

positioning a plurality of amplifiers on the first side of the substrate;

positioning the array of sensor elements in columns;

5 connecting a readout lead to each of the columns; and

connecting each read out lead to an amplifier of the plurality of amplifiers.

19. (Previously Presented) The method of claim 17, further comprising:

positioning one or more analog multiplexers upstream of the module on the first side of the substrate; and

5 positioning one or more digital multiplexers downstream of the module on the first side of the substrate.

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20. (Previously Presented) The method of claim 17, further comprising:

providing a plurality of flexible connections downstream of the modules on the first side of the substrate for connecting the modules to remote electronics.

21. (New) The imaging device of claim 10, wherein the electronic module includes at least one analog-to-digital converter for converting analog signals from the sensor elements into digital output signals.

22. (New) The imaging device of claim 10, wherein the electronic module is mounted on the same side of the substrate as the array of sensor elements.

23. (New) The imaging device of claim 10, wherein the detector comprises more than four detectors with edges of each substrate, other than the one edge on which the module is mounted, abutting each other.

24. (New) A detector for an imaging device, comprising

a) a substrate;

b) an array of sensor elements, which is formed on one face of the substrate;

c) at least one integrated electronic module for processing sensor signals, the module being mounted at one edge of the substrate and being connected at its input side to the sensor elements, and the module comprising at least one analog-to-digital converter for conversion of analog input signals into digital output signals,

wherein the module is mounted on the same face of the substrate as the array of sensor elements, and

wherein logic for addressing the sensor elements is integrated into the array of sensor elements such that no edge of the substrate is used to accommodate an addressing circuit.